MARKED UP VERSION OF AMENDMENTS

[A METHOD OF ESTIMATING THE PITCH OF A SPEECH SIGNAL USING A BINARY SIGNAL, USE OF THE METHOD, AND A DEVICE ADAPTED THEREFOR]

A METHOD AND DEVICE FOR ESTIMATING THE PITCH OF A SPEECH SIGNAL, USING A BINARY SIGNAL

CROSS REFERENCES TO RELATED APPLICATIONS

This application for patent claims the benefit of priority from, and hereby incorporates by reference the entire disclosure of, co-pending U.S. Provisional Application for

5   Patent Serial No. 60/197,044, filed April 14, 2000.

Field of the Invention

The invention relates to a method and device for estimating the

10   pitch of a speech signal, for example, in telephones.

Background of the Invention

In many speech processing systems it is desirable to know the

15   pitch period of the speech. As an example, several speech enhancement algorithms are dependent on having a correct estimate of the pitch period. One field of application where speech processing algorithms are widely used is in mobile telephones.

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A well known way of estimating the pitch period is to use the autocorrelation function, or a similar conformity function, on the speech signal. An example of such a method is described in the article D.A. Krubsack, R. J. Niederjohn, "An

25   Autocorrelation Pitch Detector and Voicing Decision with Confidence Measures Developed for Noise-Corrupted Speech", IEEE